

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 **Claim 1** (currently amended) A network apparatus for
2 communicating multi-media information by mobile terminals,
3 comprising:
4 an Internet interface means for establishing an
5 interface with the Internet;
6 a mobile interface means for establishing an
7 interface with a mobile network;
8 a protocol processing means for applying a
9 protocol process to information which is processed by the
10 Internet interface means and the mobile interface means;
11 an image information edit processing means for
12 editing a display characteristic of image information which
13 is extracted by the protocol processing means into image
14 information suitable for a mobile communication with a
15 mobile terminal by thinning the image information, said
16 display characteristic being at least one of a screen size
17 of the image information and a color depth of the image
18 information;
19 a storage unit for storing the image information
20 which is edited by the image information edit processing
21 means; and
22 a storage unit controlling means for controlling

23 to store the image information in the storage unit and to
24 *Bl* read the stored image information; and
cont
25 a transmission timing control processing means
26 for informing the storage unit controlling means of a
27 transmission timing so as to transmit the image information
28 continuously every unit time.

1 **Claim 2** (previously amended) A network apparatus
2 according to claim 1, wherein the image information which
3 is transmitted/received in respective interfaces of said
4 Internet interface means, said mobile interface means, said
5 protocol processing means, said image information edit
6 processing means, and said storage unit controlling means
7 is communicated in a cellulated format.

1 **Claim 3** (currently amended) A network apparatus
2 *Bl* according to claim 1, wherein said mobile interface means
cont includes:

4 a mobile protocol reception processing means for
5 receiving information from the mobile network and then
6 informing the protocol processing means; and

7 a mobile protocol transmission processing means
8 for transmitting information from the protocol processing
9 means and information from the storage unit controlling

10 means to the mobile network via a transmission process, and
11 ~~a transmission timing control processing means~~
12 ~~for informing the storage unit controlling means of a~~
13 ~~transmission timing so as to transmit the image information~~
14 ~~continuously every unit time.~~

1 Claim 4 (original) A network apparatus according to claim
2 1, wherein said Internet interface means includes:

3 an Internet protocol reception processing means for
4 performing a communication process of the information received
5 from the Internet and then informing the protocol processing
6 means; and

7 an Internet protocol transmission processing means for
8 transmitting the information received from the protocol
9 processing means to the Internet.

1 Claim 5 (original) A network apparatus according to claim
2 4, wherein said Internet interface means includes an interface
3 for cellulating the information to communicate communication
4 information and the image information when the Internet protocol
5 reception processing means and the Internet protocol transmission
6 processing means communicate with the protocol processing means.

1 Claim 6 (original) A network apparatus according to claim
2 1, wherein said protocol processing means includes:

3 an Internet protocol address analysis processing means

4 for analyzing that the information from the Internet interface
5 means correspond to either of communication information and the
6 image information;

7 an image information protocol processing means for
8 executing a protocol process of the image information from the
9 Internet protocol address analysis processing means;

10 a data reproduction processing means for processing
11 the image information which are protocol-processed by the image
12 information protocol processing means to reproduce original
13 information; and

14 a communication network protocol processing means for
15 protocol-processing the information supplied to the Internet and
16 the mobile network.

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2 **Claim 7** (original) A network apparatus according to claim
3 1, wherein said image information edit processing means includes:

4 a reproduced data storage unit for storing the image
5 information reproduced by the protocol processing means;

6 a received data managing means for managing
7 writing/reading of reproduced data into/from the reproduced data
8 storage unit; and

9 a reproduced data editing means for editing the
10 reproduced data read from the reproduced data storage unit into
11 a format which is suitable for the mobile terminal.

1 **Claim 8** (original) A network apparatus according to claim

2 3, wherein said mobile protocol transmission processing means
3 includes:

4 an asynchronous information processing means for
5 processing asynchronous communication information from the
6 protocol processing means;

7 a synchronous information processing means for
8 processing synchronous image information from the storage unit
9 controlling means;

10 a transmission buffer for transmitting the information
11 to the mobile network; and

12 an information write controlling means for controlling
13 to write the image information from the synchronous information
14 processing means into the transmission buffer prior to
15 communication information from the asynchronous information
16 processing means,

17 whereby the image information processed by the
18 synchronous information processing means are transmitted to the
19 mobile network prior to the communication information so as to
20 allow continuous reproduction of the image information.

1 **Claim 9** (original) A network apparatus according to claim
2 1, wherein said storage unit controlling means includes:

3 an edit data split processing means for splitting
4 edited information edited by the image information edit
5 processing means into cellulated information to write them into
6 the storage unit;

7 a storage unit managing means for managing reading
8 process/ writing process from/into the storage unit;

9 a data storage processing means for instructing the
10 storage unit managing means of writing of split data edited by
11 the edit data split processing means; and

12 a data read processing means for instructing the
13 storage unit managing means of reading in response to a reading
14 timing instruction issued from the mobile interface means.

1 **Claim 10** (original) A network apparatus comprising:

2 a mobile interface means for establishing an interface
3 with a mobile network in communication with the mobile network;

4 a protocol processing means for processing protocol of
5 information supplied from the mobile terminal and processed by
6 the mobile interface means;

7 a storage unit controlling means for controlling to
8 read image information stored in the storage unit;

9 wherein the image information read from the storage
10 unit are supplied constantly to the mobile network to deliver
11 broadcast.

1 **Claim 11** (currently amended) A network apparatus for

2 communicating image information between mobile terminals
3 comprising:

4 a mobile interface means for establishing an
5 interface with a mobile network in communication with the

6 mobile network;

7 a protocol processing means for processing
8 protocol of image information from one of the mobile
9 terminals;

10 an image information edit processing means for
11 editing a display characteristic of the image information
12 into edited information suitable for said one of the mobile
13 terminals, said display characteristic being at least one
14 of a screen size of the image information and a color depth
15 of the image information;

16 a storage unit for storing the edited
17 information; and

18 a storage unit controlling means for controlling
19 to store the edited information into the storage unit and
20 to read stored edited information.

1 Claim 12 (original) A network apparatus comprising:

2 an image information conversion processing means for
3 converting plural types of image information formats, which are
4 handled by respective mobile terminals, into a common image
5 information format, which can be handled commonly in
6 communication with the mobile network.

1 Claim 13 (currently amended) A network apparatus
2 comprising:

3 a mobile interface means for establishing an
4 interface with a mobile network in communication with the
5 mobile network;

6 a protocol processing means for processing
7 protocol of image information from the mobile terminal;

8 an image information conversion processing means
9 for converting the image information into a common image
10 information format;

11 a storage unit for storing converted image
12 information;

13 a storage unit controlling means for controlling
14 to store the image information into the storage unit and to
15 read stored image information; and

16 *my copy* an image information custom processing means for
17 editing a display characteristic of the image information
18 read from the storage unit into the image information which
19 is suitable for respective mobile terminals, said display
20 characteristic being at least one of a screen size of the
21 image information and a color depth of the image
22 information;

23 wherein the image information can be communicated
24 between different types of mobile terminals.

1 **Claim 14** (currently amended) A network apparatus
2 comprising:

3 a mobile interface means for establishing an
4 interface with a mobile network in communication with the
5 mobile network;

6 a protocol processing means for processing protocol
7 of image information from the mobile terminal;

8 a storage unit for storing the image information in
9 a common image information format;

10 a storage unit controlling means for controlling to
11 store the image information into the storage unit and to read
12 stored image information; and

13 an image information custom processing means for
14 editing a display characteristic of the image information
15 read from the storage unit into the image information which
16 is suitable for respective mobile terminals, said display
17 characteristic being at least one of a screen size of the
18 image information and a color depth of the image information;

19 wherein the image information read from the storage
20 unit are supplied constantly to the mobile network to deliver
21 broadcast.

1 **Claim 15** (currently amended) A network apparatus for
2 communicating multi-media information by mobile terminals,
3 comprising:

4 an Internet interface means for establishing an
5 interface with the Internet;

6 a mobile interface means for establishing an
7 interface with a mobile network;

8 a protocol processing means for processing protocol
9 of information which is processed by the Internet interface
10 means and the mobile interface means;

11 an image information conversion processing means
12 for converting the image information extracted by the
13 protocol processing means into a common image information
14 format;

15 a storage unit for storing the image information
16 converted by the image information conversion processing
17 means;

18 a storage unit controlling means for controlling
19 to store the image information into the storage unit and to
20 read stored image information; and

21 an image information custom processing means for
22 editing and processing a display characteristic of the
23 image information read by the storage unit controlling
24 means to perform a mobile communication, said display
25 characteristic being at least one of a screen size of the
26 image information and a color depth of the image
27 information.

1 **Claim 16** (currently amended) A network communication
2 method applied to a network apparatus in a network for

3 communicating multi-media information by mobile terminals,
4 comprising the steps of:
5 interface-processing information between the
6 Internet and the network apparatus;
7 interface-processing information between a mobile
8 network and the network apparatus;
9 protocol-processing the information which is
10 interface-processed;
11 *edit* edit-processing a display characteristic of the
12 image information which is extracted by protocol process to
13 perform a mobile communication, said display characteristic
14 being at least one of a screen size of the image
15 information and a color depth of the image information;
16 storing the image information which is subjected
17 to edit process; and
18 controlling storing of the image information and
19 reading of stored image information.

1 **Claim 17** (previously amended) A network
2 communication method according to claim 16, wherein the
3 image information which is transmitted/received is
4 communicated in a cellulated format in an interface with
5 the Internet interface means, an interface with the mobile
6 interface means, an interface when the information which is
7 interface-processed is protocol-processed, an interface

8 when the image information extracted via the protocol
9 process is edit-processed, and an interface when the image
10 information is stored and stored image information is read.

1 **Claim 18** (original) A network communication
2 method according to claim 16, wherein the step of interface-
3 processing the information between the mobile network and
4 the network apparatus includes the steps of:

5 receiving the information from the mobile network
6 and then informing the protocol processing means;

7 transmitting the information from the protocol
8 processing means and the information from the storage unit
9 controlling means, which controls storage of the image
10 information, via transmission process to the mobile
11 network; and

12 informing the storage unit controlling means,
13 which controls storage and reading of the image
14 information, of a transmission timing so as to transmit the
15 image information continuously every unit time,

16 whereby continuous reproduction of the image
17 information for the mobile network can be achieved based on
18 such information of the transmission timing to the storage
19 unit controlling means.

1 **Claim 19** (original) A network communication method

2 according to claim 16, wherein the step of interface-
3 processing between the Internet and the network apparatus,
4 includes the steps of:

5 performing a communication process of the
6 information received from the Internet and then informing
7 the protocol processing means; and

8 transmitting the information received from the
9 protocol processing means to the Internet.

1 **Claim 20** (previously amended) A network
2 communication method according to claim 19, wherein the
3 step of interface-processing between the Internet and the
4 network apparatus, includes the steps of:

5 cellulating communication information and the
6 image information which is communicated between the
7 protocol processing means and the Internet, when the
8 information received from the Internet is communicated and
9 transmitted to the protocol processing means and also the
10 information received from the protocol processing means is
11 transmitted to the Internet.

1 **Claim 21** (previously amended) A network
2 communication method according to claim 16, wherein the
3 step of protocol-processing the information being

4 interface-processed, includes the steps of:
5 determining that the information which are
6 interface-processed correspond to either of communication
7 information and the image information to the mobile
8 network;
9 protocol-processing analyzed image information;
10 processing the image information which is
11 protocol-processed to reproduce original information; and
12 protocol-processing the information supplied to
13 the Internet and the mobile network.

1 **Claim 22** (previously amended) A network
2 communication method according to claim 16, wherein the
3 step of edit-processing the image information which is
4 extracted by protocol process to perform a mobile
5 communication, includes the steps of:
6 storing the image information reproduced by the
7 protocol processing means;
8 managing writing/reading of reproduced image
9 information; and
10 editing read reproduced data into a format which
11 is suitable for mobile communication.

1 **Claim 23** (previously amended) A network

2 communication method according to claim 18, wherein the
3 step of transmitting the information from the protocol
4 processing means and the information from the storage unit
5 controlling means which controls storage of the image
6 information via transmission process to the mobile network,
7 includes the steps of:

8 processing asynchronous communication information
9 from the protocol processing means;

10 processing synchronous image information from the
11 storage unit controlling means;

12 a transmission buffer for transmitting the
13 information to the mobile network;

14 storing processed synchronous image information
15 to be transmitted prior to processed asynchronous
16 communication information; and

17 transmitting the processed synchronous image
18 information to the mobile network;

19 whereby the image information processed by the
20 synchronous information processing means is transmitted to
21 the mobile network prior to the communication information
22 so as to allow continuous reproduction of the image
23 information.

1 **Claim 24** (previously amended) A network
2 communication method according to claim 16, wherein the

3 step of controlling storing of the image information and
4 reading of stored image information, includes the steps of:
5 splitting edited data which is obtained by
6 editing the image information extracted by the protocol
7 process to perform the mobile communication so as to store
8 the edited data;

9 processing storing and reading of edited data by
10 the storage unit managing means;

11 instructing the storage unit managing means to
12 write edited split data; and

13 instructing the storage unit managing means of
14 reading in response to a reading timing instruction issued
15 from the mobile interface means.

1 **Claim 26** (currently amended) A network communication
2 method in communication with a mobile network, comprising
3 the steps of:

4 interface-processing information between a
5 network apparatus and the mobile network;

6 protocol-processing information which is supplied
7 from the mobile terminal and interface-processed;

8 editing a display characteristic of the image
9 information being protocol-processed into edited
10 information suitable for the mobile terminal, said display
11 characteristic being at least one of a screen size of the

12 image information and a color depth of the image
13 information;
14 storing the edited information; and
15 controlling storing and reading of the edited
16 information;
17 wherein the image information is communicated
18 between the mobile terminals.

1 **Claim 27** (original) A network communication method in
2 communication with a mobile network, comprising the steps
3 of:
4 protocol-processing information which are
5 supplied from the mobile terminal and interface-processed;
6 and
7 converting plural types of image information
8 formats, which are protocol-processed and handled by
9 respective mobile terminals, into a common image
10 information format, which can be handled commonly.

1 **Claim 28** (currently amended) A network communication
2 method in communication with a mobile network, comprising
3 the steps of:
4 interface-processing information between a
5 network apparatus and the mobile network;
6 protocol-processing information which is supplied

7 from the mobile terminal and interface-processed;
8 converting plural types of image information
9 formats into a common image information format;
10 storing converted image information; and
11 reading stored image information and then editing
12 a display characteristic of the image information into the
13 image information which is suitable for plural types of
14 mobile terminals, said display characteristic being at
15 least one of a screen size of the image information and a
16 color depth of the image information;
17 *Def* wherein the image information can be communicated
18 *cont* between different types of mobile terminals.

1 **Claim 29** (currently amended) A network communication
2 method in communication with a mobile network, comprising
3 the steps of:
4 interface-processing information between a
5 network apparatus and the mobile network;
6 protocol-processing information which is supplied from
7 the mobile terminal and interface-processed;
8 providing a reading instruction and a reading
9 timing to read stored image information in a common image
10 information format;
11 editing a display characteristic of read image
12 information into the image information which is suitable

13 for respective mobile terminals, said display
14 characteristic being at least one of a screen size of the
15 image information and a color depth of the image
16 information; and
17 broadcasting edited image information by
18 supplying the edited information constantly to the mobile
19 network.

1 **Claim 30** (currently amended) A network communication
2 method applied to a network apparatus in a network for
3 communicating multi-media information by mobile terminals,
4 comprising the steps of:
5 interface-processing information between the
6 Internet and the network apparatus;
7 interface-processing information between a mobile
8 network and the network apparatus;
9 protocol-processing the information which is
10 interface-processed;
11 converting the image information extracted by the
12 protocol process into a common image information format;
13 storing the image information which is converted
14 into the common image information format; and
15 reading stored image information and then custom-
16 processing a display characteristic of the stored image
17 information, said display characteristic being at least one

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- 18 of a screen size of the image information and a color depth
19 *Page 21* of the image information.
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